



DTV1500LFP

(CRT HORIZONTAL DEFLECTION) HIGH VOLTAGE DAMPER DIODE

MAIN PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	4 A
V_{RRM}	1500 V
$V_F(\max)$	1.5 V
$t_{rr}(\max)$	170 ns

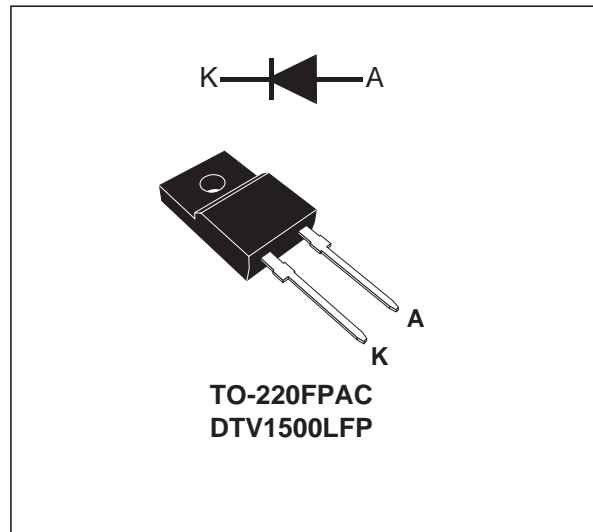
FEATURES AND BENEFITS

- High breakdown voltage capability
- High frequency operation
- Specified turn on switching characteristics
- Very fast recovery diode
- Low static and peak forward voltage drop for low dissipation
- Insulated package: TO-220FPAC
Insulating voltage = 2000V DC
Capacitance = 12pF
- Planar technology allowing high quality and best electrical characteristics

DESCRIPTION

High voltage diode especially designed for horizontal deflection stage in standard and high resolution displays for TV's and monitors.

This device is packaged in TO-220FPAC (insulated package).



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	1500	V
$I_{F(RMS)}$	RMS forward current	15	A
I_{FSM}	Surge non repetitive forward current	50	A
	$t_p = 10\text{ms}$ sinusoidal		
T_{stg}	Storage temperature	- 65 to 150	°C
T_j	Maximum operating junction temperature	150	°C

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THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to Case thermal resistance	5.8	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
I_R *	Reverse leakage current	$V_R = 1500V$	$T_j = 25^\circ C$			100	μA
			$T_j = 125^\circ C$		100	1000	μA
V_F **	Forward voltage drop	$I_F = 4A$	$T_j = 25^\circ C$		1.2	1.7	V
			$T_j = 125^\circ C$		1.1	1.5	

pulse test : * $t_p = 5\text{ ms}$, $\delta < 2\%$

** $t_p = 380\ \mu s$, $\delta < 2\%$

RECOVERY CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
t_{rr}	Reverse recovery time	$T_j = 25^\circ C$	$I_F = 1\text{ A}$ $di_F/dt = -50\text{ A}/\mu s$ $V_R = 30V$		130	170	ns
t_{rr}	Reverse recovery time	$T_j = 25^\circ C$	$I_F = 100\text{ mA}$ $I_R = 100\text{ mA}$ $I_{RR} = 10\text{ mA}$		850		ns

TURN-ON SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions		Value			Unit
				Min	Typ	Max	
t_{fr}	Forward recovery time	$T_j = 100^\circ C$	$I_F = 4\text{ A}$ $di_F/dt = 80\text{ A}/\mu s$ $V_{FR} = 3\text{ V}$			450	ns
		$T_j = 25^\circ C$	$I_F = 6.5\text{ A}$ $di_F/dt = 50\text{ A}/\mu s$ $V_{FR} = 3\text{ V}$			450	
V_{Fp}	Peak forward voltage	$T_j = 100^\circ C$	$I_F = 4\text{ A}$ $di_F/dt = 80\text{ A}/\mu s$		28	36	V
		$T_j = 25^\circ C$	$I_F = 6.5\text{ A}$ $di_F/dt = 50\text{ A}/\mu s$		13	17	

To evaluate the maximum conduction losses use the following equation :

$$P = 1.2 \times I_{F(AV)} + 0.075 \times I_{F(RMS)}^2$$

Fig. 1: Power dissipation versus peak forward current (triangular waveform, $\delta = 0.45$)

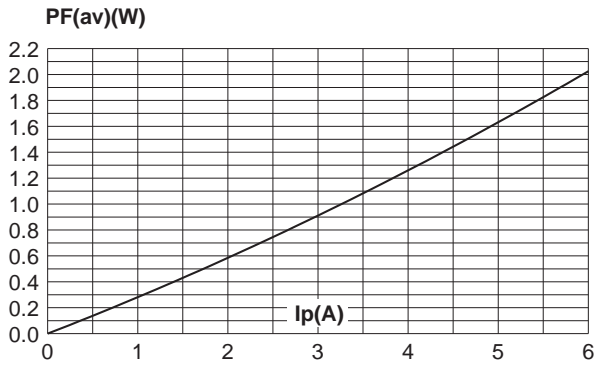


Fig. 2: Average forward current versus ambient temperature

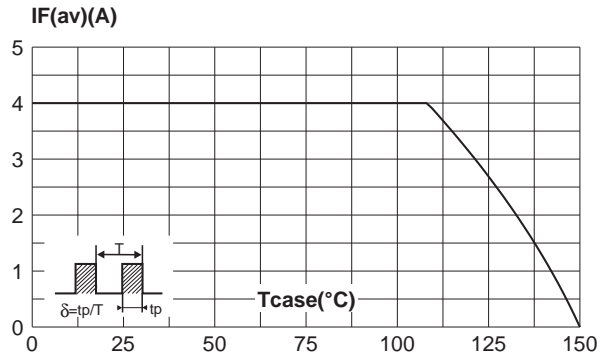


Fig. 3: Forward voltage drop versus forward current

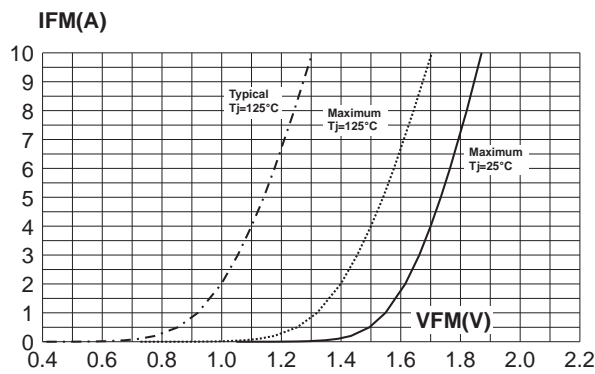


Fig. 4: Non repetitive surge peak forward current versus overload duration

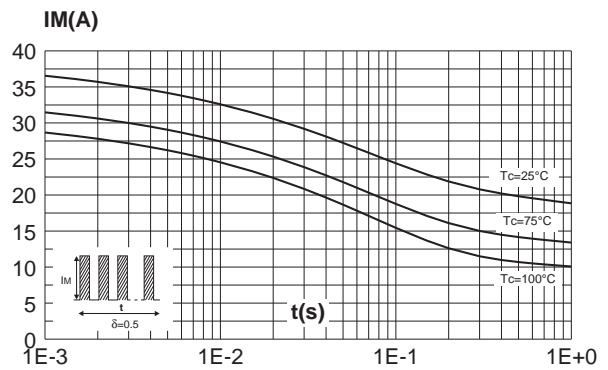


Fig. 5: Reverse recovery charges versus dIF/dt

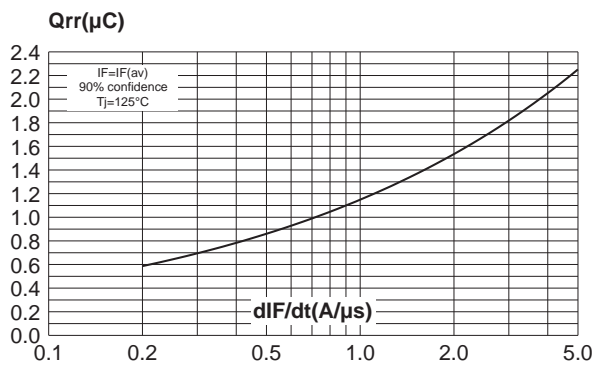


Fig. 6: Reverse recovery current versus dIF/dt

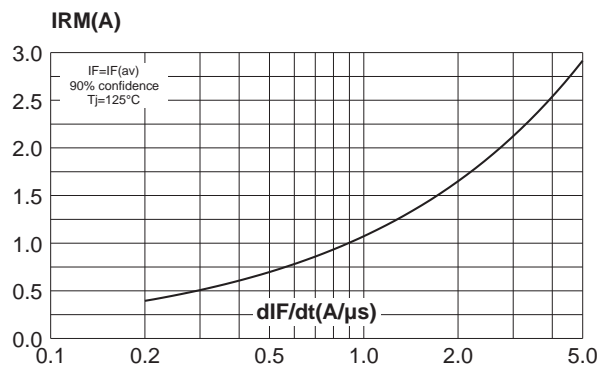


Fig. 7: Transient peak forward voltage versus dI_F/dt

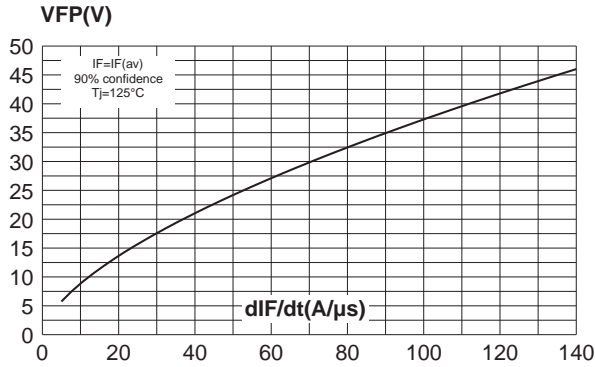


Fig. 8: Forward recovery time versus dI_F/dt

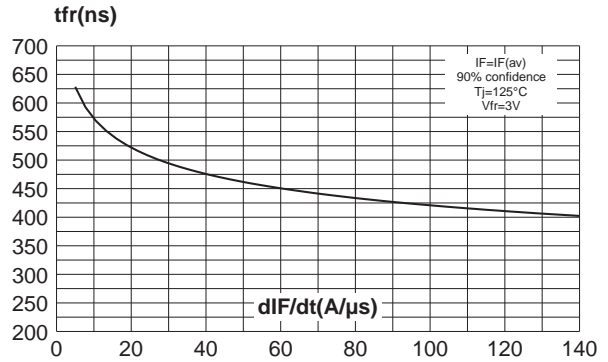


Fig. 9: Dynamic parameters versus junction temperature

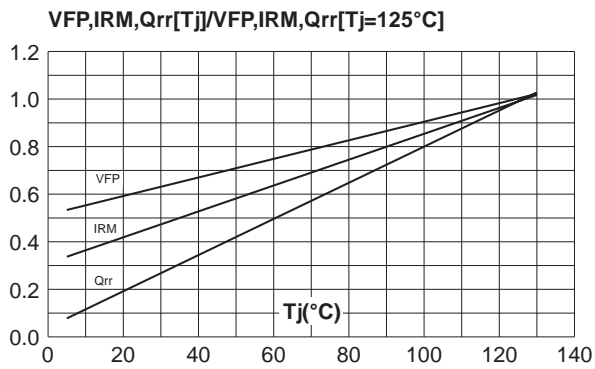


Fig. 10: Junction capacitance versus reverse voltage applied (typical values)

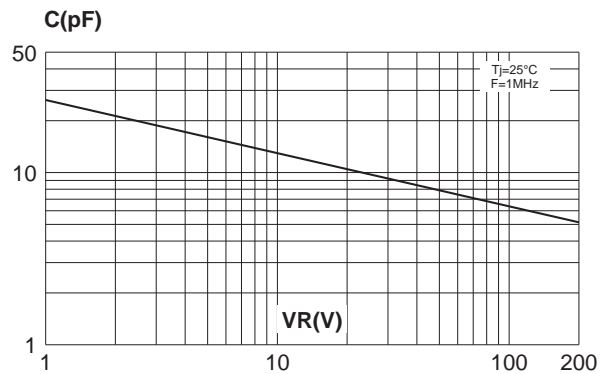
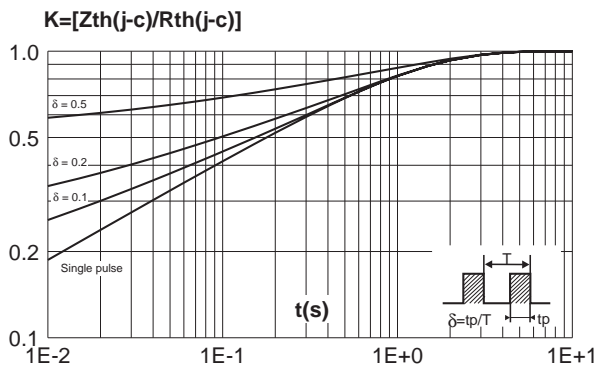
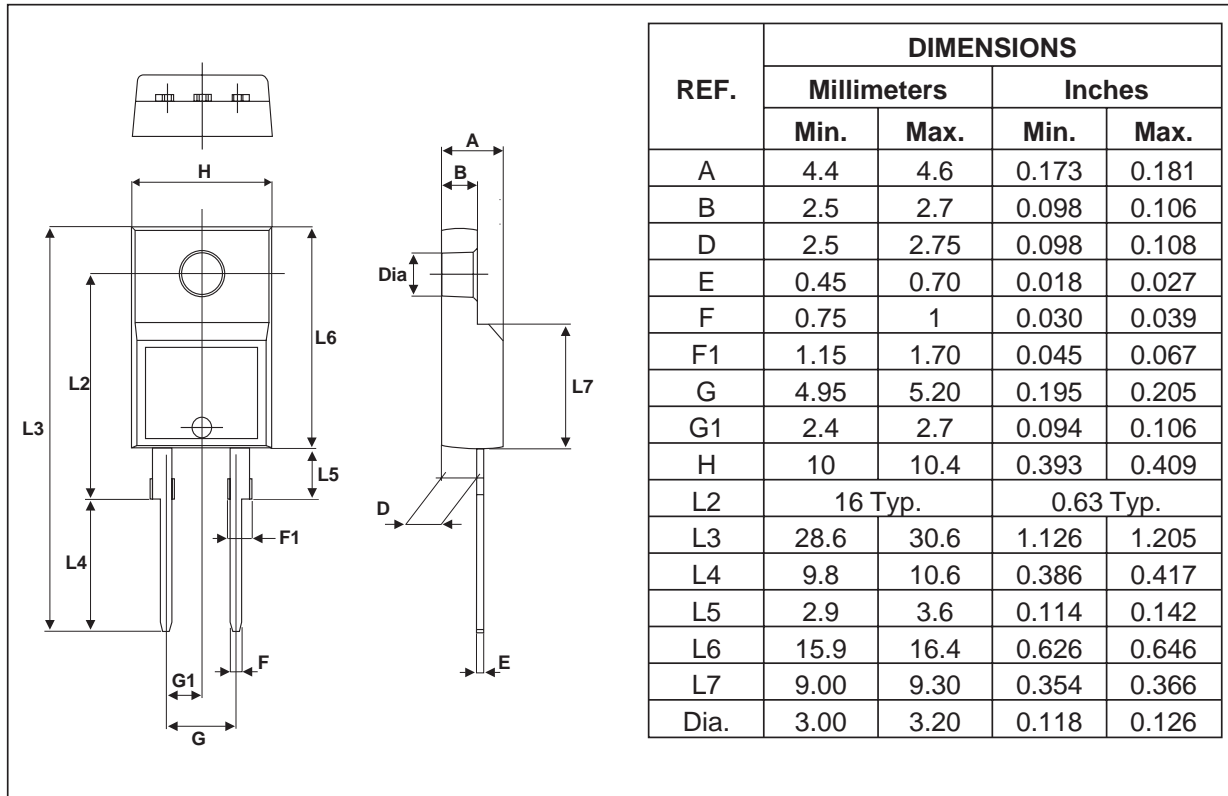


Fig. 11: Relative variation of thermal impedance junction to case versus pulse duration



DTV1500LFP

PACKAGE DATA TO-220FPAC



Type	Marking	Package	Weight	Base qty	Delivery mode
DTV1500LFP	DTV1500LFP	TO-220FPAC	1.8g	50	Tube

- Cooling method: C
- Epoxy meets UL94-V0
- Torquevalue: 0.55 m.Ntyp (0.7m.Nmax)
- Electrical Isolation: 2000V DC
- Capacitance: 12pF

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